

General Atomics' Selective Gaseous Extraction: High Quantity/Quality Mo-99 at Reduced Waste and Cost

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ABSTRACT

The Mo-99 production industry is in transition to full cost recovery while prices are held down by reimbursement rates. Significant participants are exiting the market. Recognizing the potential shortfalls, several industry efforts have been started to develop replacement production capability. General Atomics' offering is based on selective gaseous extraction of Mo-99 produced by fission in porous fuel.

Selective gaseous extraction uses a product gas to convert Mo-99 from solid to gas in the fuel. This gas is removed from the target and collected for processing and purification. This process brings several important advantages: reduced fuel requirements and waste due to continued use of the low enriched uranium fuel target, reduced time from Mo-99 production to market, use of existing generator and downstream infrastructure, simplified operations relative to uranium dissolution processes, and reduced unit cost which supports full cost recovery efforts. Testing has confirmed selective gaseous extraction predictions in multiple reactors.